UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,242	08/07/2001	Wendell L. Little	20661-00876	3482

7590 08/26/2005	EXAMINER
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ART UNIT	PAPER NUMBER
2154	

DATE MAILED: 08/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)
Office Action Summary		09/924,242	LITTLE ET AL.
		Examiner	Art Unit	
		Mohammad A. Siddiqi	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *06 June 2005*.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-17* is/are pending in the application.

    4a) Of the above claim(s) *18-26* is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-17* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-17 are presented for examination. Claims 18-26 have been

cancelled.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis

for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
> described as set forth in section 102 of this title, if the differences between the subject
> matter sought to be patented and the prior art are such that the subject matter as a
> whole would have been obvious at the time the invention was made to a person having
> ordinary skill in the art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

3.   Claims 1-17 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Curry et al. (6,032,248) (hereinafter Curry) in view of

Stan Liao et al. (Code Optimization Techniques for Embedded DSP

Microprocessors, by Stan Liao, Srinivas Devdas, Kurt Keutzer, Steve Tjiang,

and Albert Wang, January 1995, Prtoceedings of the 32nd ACM/IEEE

conference on design automation) (hereinafter Liao).

4.   As per claim 1, Curry discloses a microcontroller, said microcontroller

comprising (col 5, lines 22-27):

two data pointers, each data pointer pointing to a data memory

location (col 9, lines 5-10); and

a microcontroller core being capable manipulating data memory by

using special flag bit (pointer holds the address of the data, col 9, lines 5-30

and col 6, lines 9-20); enable bit (col 9, lines 14-15), upon execution of a

data pointer related instruction (MOVX, col 9, lines 5-30)

Curry did not expressly teach the controlling of automatically

incrementing/decrementing a selected data pointers based upon a value of

an automatic increment/decrement (AID).

Liao discloses controlling the controlling of automatically

incrementing/decrementing a selected data pointers based upon a value of

an automatic increment/decrement (AID) (fig 1, page 1- 2, Section II). It

would have been obvious to one of ordinary skill in the data processing art

at the time invention to combine the teachings of Curry and Liao. The

motivation would have been providing efficient and flexible use of memory in

8-bit microcontroller.

5.   As per claim 2, Curry discloses the data pointer related instruction is a

data move instruction (MOVX, col 9, lines 16-19).

6.   As per claim 3, the claim is rejected for the same reasons as claim 1,
above.

7.   As per claim 4, the claim is rejected for the same reasons as claim 1,
above. In addition, Liao discloses wherein the microcontroller core
automatically increments/decrements the selected one of the two data
pointers when the AID enable bit is at a first logic value and does not
automatically increment/decrement the selected one of the two data
pointers when the AID enable bit is at a second logic value (page 3 and page
6) section VII).

8.   As per claim 5, the claim is rejected for the same reasons as claim 1,
above. In addition, Curry discloses microcontroller core further comprises an
Arithmetic Logic Unit (ALU) (col 5, lines 21-30).

9.   As per claim 6, Curry discloses a microwave oven, a refrigerator, a
television, a radio, a VCR, a stereos, a laser printer, a modem, a disk drive,
an automotive engine controller, an automotive engine diagnosticator, and a
climate controller (col 1, lines 14-24).

10.   As per claim 7, the claim is rejected for the same reasons as claim 1,

above. In addition Curry discloses, selecting a data pointer from two data

pointers (col 9, lines 14-30); determining a value of a bit in a data pointer

select register (col 9, lines 14-21); and automatically altering the value in

the data pointer, based upon the value of the bit in the data pointer select

register (col 9, lines 5-30 and col 11, lines 9-25).

11.   As per claim 8, the claim is rejected for the same reasons as claim 1,

above. In addition, Curry discloses determining whether an instruction is a

data pointer related instruction, wherein the step of automatically altering

the value in the data pointer is further based upon the determination that

the instruction is a data pointer related instruction (MOVX, col 9, lines 5-30).

12.   As per claim 9, the claim is rejected for the same reasons as claim 1,

above. In addition, Liao discloses wherein the step of automatically altering

the value in the data pointer comprises automatically incrementing the data

pointer (register allocation, page 1- 2, Section II and page 3, Section IV).

13.   As per claim 10, the claim is rejected for the same reasons as claim 9,

above.

14.   As per claims 11 and 12, claims are rejected for the same reasons as

claim 1 and 9, above.

15.   As per claim 13, the claim is rejected for the same reasons as claim 1,

above.

16.   As per claim 14, Liao discloses the register is a data pointer select

register within a special function register (fig 1, page 1-2, section II).

17.   As per claim 15, the claim is rejected for the same reasons as claims

1-4, above.

18.   As per claim 16, the claim is rejected for the same reasons as claims

1-4, above.

19.   As per claim 17, the claim is rejected for the same reasons as claims

1-4, above.

Response to Arguments

20.   Applicant's arguments filed 06/06/2005 have been fully considered but

they are not persuasive, therefore rejections to claims 1-17 is maintained.

21.   In the remarks applicants argued that:

Argument: Liao does not teach automatically increment/decrement one of

two selected data pointers.

Response: In response to Applicant's arguments **against the references**

individually, one cannot show non-obviousness by attacking references

individually where the rejections are based on combinations of references.

See *In re Keller,* 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck &*

Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's argument that there is no suggestion to

combine the references, the examiner recognizes that obviousness can only

be established by combining or modifying the teachings of the prior art to

produce the claimed invention where there is some teaching, suggestion, or

motivation to do so found either in the references themselves or in the

knowledge generally available to one of ordinary skill in the art. See *In re*

Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones,* 958

F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Curry teaches two

data pointers (dual data pointer, col 9, line 25), each data pointer pointing

to a data memory location (col 9, lines 5-10); and a microcontroller core

being capable manipulating data memory by using special flag bit (pointer

holds the address of the data, col 9, lines 5-30 and col 6, lines 9-20); enable

bit (col 9, lines 14-15), upon execution of a data pointer related instruction

(MOVX, col 9, lines 5-30, the MOVX function will access external data

memory at a location again noted by a selected one of data pointer 41 or 43.

Thus, by appropriate programming and making certain that two pairs of

tables are located at the same address locations in both internal and

external data memory, the combination of the dual data pointers 41 and 43

along with control signal EEMEN effectively doubles the number of data

pointers since one can use the data pointers to access two locations within

internal data memory and then access two different locations having the

same addresses in external data memory). Liao discloses controlling the

controlling of automatically incrementing/decrementing a selected data

pointers based upon a value of an automatic increment/decrement (AID) (fig

1, page 1- 2, Section II, Curry suggests appropriate programming,

automatic incrementing/decrementing can be implemented by appropriate

programming to manipulate a selected data pointers). It would have been

obvious to one of ordinary skill in the data processing art at the time

invention to combine the teachings of Curry and Liao. The motivation would

have been providing efficient and flexible use of memory in 8-bit

microcontroller.

Conclusion

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the

extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to

expire THREE MONTHS from the mailing date of this action. In the event a

first reply is filed within TWO MONTHS of the mailing date of this final action

and the advisory action is not mailed until after the end of the THREE-

MONTH shortened statutory period, then the shortened statutory period will

expire on the date the advisory action is mailed, and any extension fee

pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply

expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications

from the examiner should be directed to Mohammad A. Siddiqi whose

telephone number is (571) 272-3976. The examiner can normally be

reached on Monday -Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A. Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MAS

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